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Swiss innovation and social networks:
a thematic analysis in French-speaking print media and in
the newspaper *Le Temps*

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Abstract: Currently the themes of innovation and social networks appear in the content of press articles. Living in an Internet society where the users are increasingly involved in the innovation process, thus acting upon the notion of “Bottom-Up innovation”, as coined by Eric von Hippel (1998, 2005, 2013), indicates it is worthwhile to analyse the place of these terms in respect to our daily lives as well as their evolution over time. Are the terms innovation and social networks important in public debates? Which principles define the model of Swiss Innovation, often compared to that of Silicon Valley? As Switzerland’s position improves within the global innovation rankings over time, is it possible to observe in parallel increased occurrences of these themes in the press? Could the two notions of innovation and social networks be interlinked? Are there any enterprises, which appear through the media press, as particularly present in the fields of innovation and/or social networks?

Keywords: innovation, social networks, enterprises, *Le Temps*, press

*L'innovation suisse et les réseaux sociaux:
une analyse thématique dans la presse francophone et le journal
Le Temps*

Résumé : L'innovation et les réseaux sociaux sont des thématiques qui apparaissent dans le contenu des articles de presse aujourd'hui. Dans une société où l'utilisateur prend de plus en plus part au processus d'innovation et vient au service de ce qu'Eric von Hippel appelle l'innovation ascendante (1998, 2005, 2013), il est utile d'analyser la place de ces termes dans notre quotidien ainsi que leur évolution à travers le

temps. Sont-ils importants dans le débat public ? Qu'est-ce qui définit le modèle de l'innovation helvétique, souvent comparé à celui de la Silicon Valley ? À mesure que la Suisse obtient une bonne position dans les classements internationaux sur l'innovation, est-ce que cette thématique augmente parallèlement ? Ces deux notions d'innovation et de réseaux sociaux sont-elles liées entre-elles et y a-t-il des entreprises qui semblent, à travers la presse médiatique, être particulièrement fortes en matière d'innovation et/ou de réseaux sociaux ?

Mots-clés : innovation, réseaux sociaux, entreprises, *Le Temps*, presse

1. Innovation made in Switzerland

1.1 The features of the Helvetic model

1.1.1 A leading position within innovation rankings

For several years, Switzerland has occupied a dominant position within most international rankings in respect to innovation. Each institution possesses its own calculation method, even if the ranking results appear to be quite similar. These reports confirm that despite Switzerland's small size, it provides a fruitful ground for innovation. Although, several other countries could be characterized as innovative, such as the Nordic countries (Finland, Sweden, Norway), the United States, China, Singapore, or even Great Britain, however, at this point, the success of the Swiss innovation system leads us to formulate several questions.

In order to observe the evolution of Helvetic innovation throughout the years, our study is centred around the INSEAD rankings. In 2007 this business school launched the Global Innovation Index, a report that evaluates the respective position and the capacity of innovation progress of different countries. Since this report is being produced each year since 2007, this allows us to conduct longitudinal comparisons.

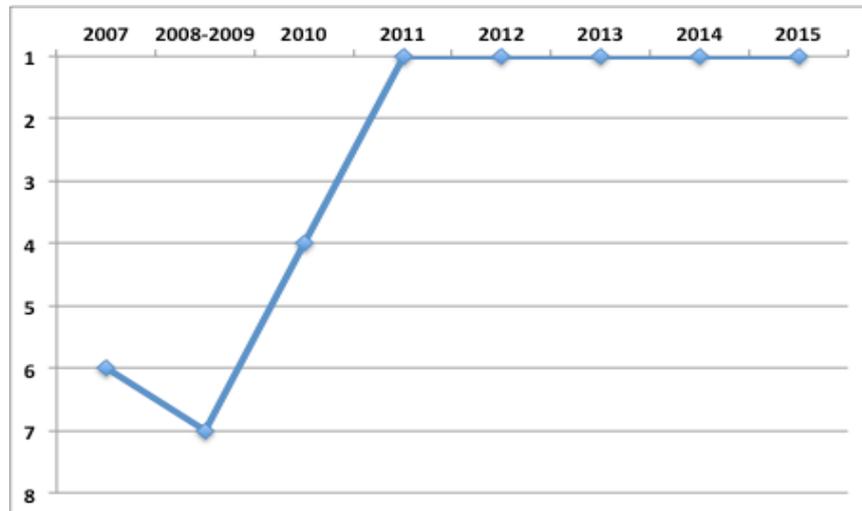


Figure 1. *Evolution of Global Innovation Index in Switzerland¹*

As indicated in *Figure 1*, Switzerland occupies the first place within the innovation ranking since 2011, consistently preserving this position every year up to the present date. Already in 2007 Switzerland held a good position since this ranking comprised 107 countries that year (141 countries recorded in 2015²). Starting 2008 – 2009, INSEAD issued this Index within a 2 year cycle. Despite the fact that the graph indicates the 7th position within the Global Innovation Index, Switzerland is positioned with South Korea (6th place). Hence, the chronological period of 2007-2011 was characterized by an increase in innovation performance. After 2011, the following years, Switzerland preserves its leading position. In view of Switzerland’s success, politicians have tried to apprehend the “components” that foster innovation in this country. Many claimed that Switzerland has been inspired by Silicon Valley whilst expressing scepticism whether the latter functions as a reference to follow for boosting innovation potential. A Helvetic think tank, comprised of experts conducting surveys under private law, independently of the state, *Avenir Suisse*, focuses on this question and delves into the analysis of the innovation ecosystem in Switzerland.

¹The horizontal axis corresponds to the years while the vertical axis represents the position in the ranking of the Global Innovation Index (1st position, 2nd position, etc.).

² INSEAD (2015). *Global Innovation Index*. Retrieved October 26, 2015, from <https://www.globalinnovationindex.org/content/page/press-release/>.

1.1.2. Different ecosystems

The study conducted by *Avenir Suisse*³ reveals that the Helvetic ecosystem has found its own way, possibly without having to pursue the path outlined by Silicon Valley. First of all, the areas of specialization for these two models differs: Switzerland is oriented towards the health sector, whereas Silicon Valley is renowned for its innovation in Information and Communication Technologies (ICT). Indeed, in Switzerland, the health sector represents 40% of the state investments. In this sector, the activities for Research and Development (R&D) are capital intensive. In addition, *Avenir Suisse* indicates that the most innovative countries are characterized as those with highest R&D spending.

Therefore which elements shape this ecosystem by making it so unique? According to the study of *Avenir Suisse*, an important factor is the “bottom up” approach contributing to the development of new ideas emerging from the base. As described by Eric von Hippel (2005) and thereafter Dominique Cardon (2006) as a bottom up innovation as the innovation process flows towards the centres of research and innovation. Put differently, ideas generated by daily uses are formulated, then translated into a statement comprehensible by everyone and finally developed by enterprises (Asdourian & Zimmerli, 2015). In addition, Switzerland is comprised of a great number of well – established enterprises capable of creating patents – which is key for the development of an innovation in order to retain control of a new idea as well as to enhance research. Patents are filed first and capital invested by the most active enterprises, as is the case of multinationals such as *Roche* or *Novartis*. Furthermore, these two companies represent 30% of the entire R&D spending in Switzerland. Without their existence, “Switzerland would be immediately excluded from the top of the international rankings in innovation. (...)” (Comtesse, 2013, p. 25). Additionally, the health sector is broad as it includes life sciences, medicine, the pharmaceutical industry, biotech, medtech, as well as the dental sector and nutrition, including the multinational *Nestlé*. Consequently, this sector is diversified, which lessens the risk compared to that of Silicon Valley (Comtesse, 2013, p. 32). However, Silicon Valley produces disruptive innovations, which add value to everyday life in contrast to incremental innovation which aims at improving an existing product or service (Schumpeter, 1983). Despite the fact that disruptive innovations are less widespread in Switzerland, they attract capital investment more easily.

Attractive wages and the overall living conditions favour the establishment of enterprises in Switzerland as well as the arrival of foreign researchers. In addition, Switzerland has integrated the development of innovation as key to its strategy by launching innovation programs lead by universities and the polytechnic schools of Lausanne and Zurich. The notions of knowledge and innovation are highly valued in Switzerland, promoted either via the media or via the public debate in daily life.

³ *Avenir Suisse* (2013). *La santé de l'innovation Suisse*. Retrieved July 16, 2015, from http://www.avenir-suisse.ch/wp-content/uploads/2013/11/dp_innovation_br_fr_hp.pdf.

1.2. *The media as a thermometer of innovation*

The issue of innovation occupies a prominent place in the French-speaking media, particularly in Switzerland. This is beneficial for the country, since this visibility contributes to the renown of researchers and enterprises having launched a new product or a new service. This social tissue encourages those who venture into the innovation process, since they will be given support upon success (Comtesse, 2013, p. 2).

We could claim that innovation capabilities of a country emerge through the media and are conveyed by many possible forms. This fact is verified by Yu Jiafeng et al. who conducted a study concerning the social network *Twitter*. Through their study, the authors aim at detecting which cities are described as the most innovative. In order to achieve this goal, the analysis was based on *Twitter*. Consequently, this social network delineates a large database which could function as a research tool not only for academics willing to recognize the most innovative cities, but also for the marketers aiming for either the investment or the improvement of their city's reputation. V. Luoma-aho interprets this practice as the « reputation formation of innovation » thus to qualify the fact that a market can acquire a more or less good reputation in respect to innovation (2007). He also claims that reputation formation of innovation is often enacted through the media and that we are moving “towards a reputation society” (2007, p. 3). This phenomenon intensifies through social networks since the non-tangible becomes more important in a world that operates on the basis of reputation instead of rationality (2007, pp. 3-4). Luoma-aho also argues that a good reputation enriches innovation. A fact that pushes the communication and the brand image to the centre of the process for the establishment of reputation and innovation (2007, p. 11). By this concept, we will identify the importance of the construction of the image established in Switzerland via media. Moreover, our principal question, which will guide our research, would be to realize which position does Swiss innovation occupy through French-speaking and Swiss print media? Added to this, are there any enterprises whose names are linked more often to innovation and social networks compared to other companies?

1.3. *The case of the investment firm Blackrock*

Our reference point at this section will be the case of *Blackrock*. This American investment company scrutinizes the Web and social networks, aiming to detect the best innovative practices in order to invest. The client director of *Blackrock*, in his interview in the Swiss newspaper *Le Temps*⁴, emphasizes the large amount of data collected from the Internet. It is also declared that 2 million searches per minute were analysed via the Internet in order to evaluate the “financial surprises” and the actions (positive and/or negative) in Switzerland⁵. Another element, which might seem quite unexpected, mentioned by *Blackrock*, is detecting enterprises where the employees feel happy. Indeed, this information can be easily justified via social

⁴ *Le Temps* (2015). *Les réseaux sociaux incitent à investir en Suisse*. Retrieved July 17, 2015, http://www.letemps.ch/Page/Uuid/b6cee06c-edcc-11e4-8a43-4ad205b10b56/Comment_battre_les_indices_boursiers_grâce_à_Google_et_aux_réseaux_sociaux.

⁵ Idem.

networks: many employers proudly publish photos or post comments on new products or new services. Certain financial analysts underline that this information can serve as perfect indicators of future performance since they reflect the quality of management as well as the effective functioning of an enterprise.

Granted that *Blackrock* utilize information provided by users via the media in order to decide where to invest, we will apply this tactic, but for a quite different purpose. Our analysis of the French-speaking print media would allow us to determine the importance of innovation in public debate as well as its evolution over time. As the context of our research is structured, we will provide certain definitions of key terms important for our study, innovation and social networks, before carrying on with the actual production of our analysis.

2. Fundamental theories for our research

2.1. Innovation

The model of *technology push* implied by the work of Joseph Schumpeter can be described as the dominant model for innovation throughout most of the 20th century. Innovation is defined as the outcome of new combinations: new products or having a distinct quality, new production method, conquest of new geographic markets, supply through new sources of raw materials or semi-manufactured goods. The engineers of the Research and Development department function as the main contributors of innovation.

This dominant approach is progressively completed through additional notions. First of all, Jacob Schmookler (1966) introduces the « *demand pull* » or « *market pull* » model of innovation. This theory, in line with the Schumpeterian theory, puts emphasis on the market, the consumer who stimulates the innovation process. This sets the stage for the interactive model of innovation (Rothwell & Zegveld, 1982) and the model of open innovation which highlights the enterprises and the users (Chesbrough, 2006; von Hippel, 1988, 2005, 2013). According to Henry Chesbrough: « open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. Open Innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology. » (2006, p. 2). Recently, Eric von Hippel (2013, p. 117) introduced the model of open user innovation: « under this second model economically important innovations are developed by users and other agents who divide up the tasks and costs of innovation development and then *freely reveal* their results. Users obtain direct use benefits from the collaborative effort. Other participants obtain diverse benefits such as enjoyment, learning, reputation, and an increased demand for complementary goods and services. ». Value is created through this collective intelligence (Surowiecki, 2008). Given this perspective, we have emphasized that a new model of innovation is instrumental based « on the process of digital re-innovations, which we will define as new combinations of information factors. » (our translation, Badillo, 2013, p. 29). From this perspective, the emergence of social network becomes a source of

multiple innovative combinations, a notion to be clarified during the following sections.

2.2. Social networks

If the origin of social networks is a well-known anecdote – creating an address book in a University to create links with other students – , the diversity of tools available today under this concept can lead to certain confusions concerning this notion. In addition, this term is often confused with that of social media⁶ - a more general notion - that of social network or social networks (most commonly used in the plural) emphasize(s) tools per se as well as their features. Boyd and Ellison define a social network site⁷ as a "networked communication platform in which participants 1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; 2) can publicly articulate connections that can be viewed and traversed by others; and 3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site" (2013, p. 7).

Through their interactive features which characterize the Web 2.0 and also 3.0, users are able to produce their own content. This newly created material bears the name of "User Generated Content" also called "User-Created Content". Currently, the Web is particularly enriched and influenced by digital services which give the users the power to contribute to the development of products and services on the Internet. Consequently, the users can play a crucial role for the establishment of added value, reaching the point of a digital co-creating based on their own ideas. Hence, it is up to the enterprises to decide whether they are ready to change their strategy in terms of innovation or if they incorporate the ideas and the know-how of users into their plan⁸. Tim O'Reilly indicated that innovative companies exploit effectively the power of collective intelligence within the Web (2005, p. 6). The participation of citizens is currently a growing phenomenon. Conducted through open data or through the capacity of developing the ideas of citizens or even through participatory journalism: an ordinary individual who was perceived until this point as « a receiver of information can, from now on, be considered as a transmitter and become a media » (our translation, Pélissier & Chaudy, 2009, p. 89).

⁶ For precise definition of the notion social media, refer to the study of Badillo, P.-Y., Bourgeois, D., & Asdourian, B. (2013). Les médias sociaux: communication "généralisée" versus communication "polarisée"- deux exemples euroméditerranéens: les révoltes dans les pays arabes et le projet Fire Paradox. In F. Bernard & M. Durampart (Eds.) *Savoirs en action, Cultures et réseaux méditerranéens*. Paris: CNRS Editions, Collection Alpha.

⁷ In this article, we perceived the definition of the term "social network site" (SNS) as indifferent to the term "social network", as the distinction of these two notions is not necessary for our analysis.

⁸ For further information, we invite you to read the article: Asdourian, B., & Zimmerli, V. (2015). Open data, usagers du numérique et entreprises publiques. Les échanges informationnels et relationnels au service de l'innovation dans les transports en commun de Genève. In P.-Y. Badillo & N. Pélissier, N. (Eds.). *Usages et usagers de l'information à l'ère numérique. Revue Française des Sciences de l'Information et de la Communication*. 6, Retrieved July 9, 2015, from <http://rfsic.revues.org/1316>.

3. Working hypothesis

If we take into consideration the latest ranking of INSEAD which places Switzerland in the first position, as well as our assumption that currently greater attention is attributed to innovation and social networks, we can hypothesize that within the print media of the French-speaking world, the importance of the topic of innovation is increasing. Therefore, we would like to examine several elements beginning with the analysis of the evolution concerning the presence of innovation as a topic over time. For this reason, we will study the print French-speaking media dated from January 2007 until December 2014, thus to make full year comparisons. In addition, we would like to analyse whether a correlation between the ranking of INSEAD occurs and the theme of innovation in the French-speaking print media. Is Swiss innovation a subject that is reflected in the print media and appears particularly as Switzerland excels in international rankings? Does the innovation “made in Switzerland” have an important echo in the print media in the French-speaking world? We have focused on the French press for this first hypothesis since we wanted to capture all possible media coverage, as French Swiss events often have an impact in the French media due to the language and the geographical proximity.

Also, it seemed interesting for us to isolate, in a second phase, this theme (Swiss innovation) covered in the Swiss press - by no longer viewing this theme within the entire French press – in order to allow our second hypothesis to emerge: implying that the importance of the theme of innovation increases in Switzerland. In fact, since Switzerland has obtained the title of “number one” in innovation, we would like to observe if this could also be conveyed through its media. For this reason, we have narrowed down our analysis to the daily newspaper of reference in French-speaking Switzerland, *Le Temps*. Additionally, in regards to the hypothesis mentioned previously, it also seemed interesting for us to incorporate the innovation of the Ecole Polytechnique Fédérale de Lausanne (EPFL) into the research of articles. EPFL is an academic institution of international renown which focuses on innovation as a key development aspect.

Throughout the previous section, we have observed that social networks are characterised as tools which trigger the evolution of innovation. However, many enterprises have not taken the bold step to orient their development strategy around digital tools and open up. This case applies particularly to financial spheres where enterprises become very cautious in terms of external collaboration. A study conducted by D. Salampassis on this issue, indicates that the employees of a financial institution demonstrate difficulties in working closely together on the internal level and every information transmission is highly controlled. Hence, it would be extremely hard to envision the implementation of open innovation in this environment (Salampassis, 2015). Therefore, this becomes a matter of mind-set and company culture, which is difficult to change within an organization. In regards to the health sector, the enterprises are forced to innovate since they strive to find new medicines or treatments. Companies suffer particularly from the pressure of the financial markets which closely observe the output of new medical drugs. Also, we had the impression that companies have become more aware of this facilitator role that social networks play for innovation and thus have implemented management

strategies oriented in this direction. Consequently our third hypothesis assumes that a strong link exists in the print French-speaking media between innovation and social networks. It will be observed whether these themes evolve in the same way and above all, if an interconnection takes place between them, evident in newspaper articles. Do we talk more about innovation than social networks? Since it is a matter of innovation, is it necessarily a matter of social networks in the content of the articles and vice versa? We will try to answer these questions through our analysis.

Finally, we have mentioned so far, that quite successful companies such as *Roche* and *Novartis* pump innovations out as they heavily invest in the domain of Research and Development. Hence our fourth hypothesis emerges, assuming that the largest enterprises in Switzerland are also the most innovative. We will test this hypothesis with the analysis of the regrouping 20 Swiss enterprises, which constitute the Swiss Market Index.

4. Methodology of the analysis

This study is conducted by a media monitoring tool, *LexisNexis*, which enables the research of a keyword within a press database. We have selected certain keywords that are important for our research – by delving into the notions of innovation and social networks – in order to study these data year after year from 2007 until 2014. Additionally, we have chosen to integrate all the French-speaking print media⁹ into our study, as they often cover the theme of innovation.

Certain Swiss media events may, for instance, have implications in the neighbouring French-speaking newspapers. We have, therefore, preferred to rely on this substantial database in order to observe the impact of French discourses on innovation and social networks. In addition, we wanted to study the theme of innovation through a Swiss media, focusing on a reference newspaper, *Le Temps*.

After having established a press review and a systematic collection of data by month and then per year, we have created *Excel* graphs visualising the evolution of the presence concerning these keywords. Each number is given by the *LexisNexis* tool by calculating the number of articles published based on a theme at a given period. If the term “innovation” appears one or more times, in a press article, in the title, the header of the text or even in the main text, *LexisNexis* records that article. We collected and aggregated data in the form of a summary table and graphs. We have not necessarily sought to consult the content of articles, except when a peak appeared on a chart stimulating our curiosity concerning the reason for this significant variance.

The operation of these theme researches was performed within a major press database including 273 French newspapers and for some of them, also their web platform. Finally we have recorded 334,143 articles that were aligned with our

⁹ *LexisNexis* gives us the possibility to concentrate our research on a database that includes only French-speaking newspapers. This choice allowed us to include in our research French-speaking and French Swiss newspapers. To see the newspapers taken into account: *LexisNexis*, Retrieved 2015, from <https://www.lexis.com/auth/sslconfirm.do>.

criteria, with the terms of innovation and social networks combined with the enterprises of SMI (Swiss Market Index) as main key words guiding our research.

5. Results

5.1. The growing theme of innovation in the francophone world

The data portrayed in the graph below illustrates the evolution of the presence concerning the theme of innovation, or put differently, the number of articles that deal with this theme, month after month from 2007 to 2014.

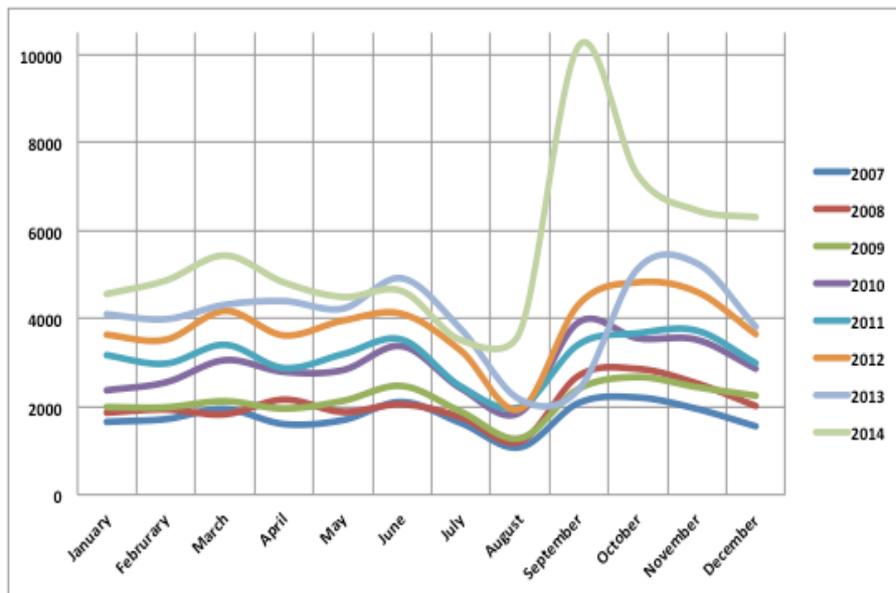


Figure 2. *Innovation in the French-speaking press*¹⁰

¹⁰ The horizontal axis corresponds to the different months of the year while the vertical axis represents the number of articles.

Also, observing the trend of each curve, we can recognize that the theme of innovation becomes more and more present - year after year - for the French-speaking press. This fact is also justified by the following *Figure* which indicates the average annual evolution from 2007 to 2014.

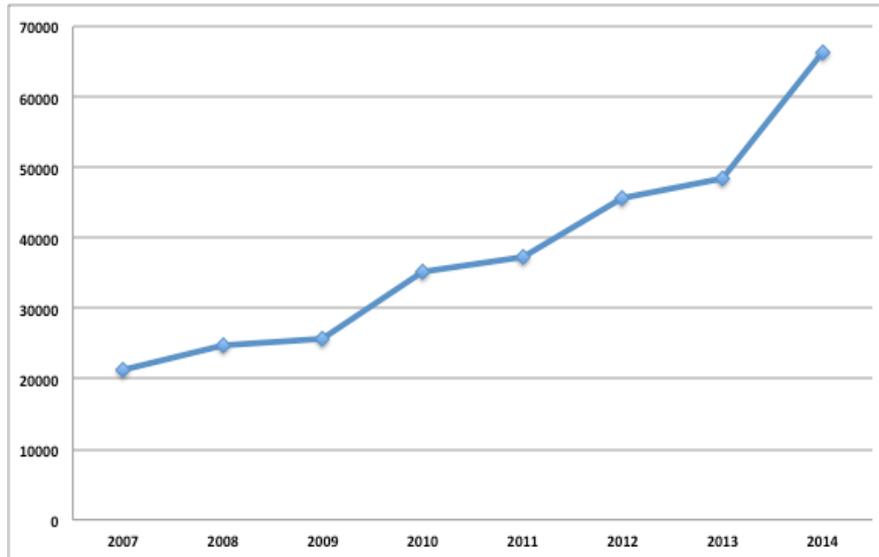


Figure 3. *Innovation in the French-speaking press per year¹¹*

In Figure 2 and Figure 3, we can observe that 2014 stands out as it conveys a quite evident growth of this theme in relation to the previous years. Nonetheless, if we concentrate on the first representation which is more detailed, we can claim that September 2014 denotes an exceptional rise of this theme discussed within the French-speaking print media, probably due to several events occurring at that period: the inauguration of an exhibition dedicated to innovation, the "Innovation Connecting Show" which took place in Toulouse 16th to 18th of September 2014, an important reunion for the finance and banking community, namely the G20 summit on the 20th and 21th of September in Australia, as well as the "Tokyo Game Show" a gathering of amateur video games which also favours the promotion of innovative products in this sector. Therefore, by analysing to a greater extent the content of articles, we can clearly observe the great journalistic enthusiasm generated around this type of events which can trigger other ideas capable of deepening the theme of innovation. Every year, we can observe that during the month of August, the theme of innovation in French-speaking media is marked by a very sharp drop, but reaches its preceding level by the month of September.

We also raised the question of the correlation between the evolution of the number of articles dealing with the theme of innovation and the ranking of INSEAD.

¹¹ The horizontal axis represents the years. The vertical axis indicates the number of articles.

As we can observe via the following *Table*, both of them evolve in the direction of an increase.

Table 1. Number of articles in relation with innovation in the French-speaking press and the INSEAD ranking

Year	Number of Articles	Increase	INSEAD
2007	21245		6
2008	24805	+ 3560	6 - 7
2009	25609	+ 804	6 - 7
2010	35123	+ 9514	4
2011	37392	+ 2269	1
2012	45624	+ 8232	1
2013	48476	+ 2852	1
2014	66246	+ 17770	1

However, it seems difficult to interlink this data directly. Both of them grow but this fact cannot establish a systematic relation between this data. We can still note certain great ranking changes, namely moving from the 6-7th position to the 4th is accompanied by a large increase in the number of articles related to the theme of innovation. Moreover, the fact that Switzerland reaches the top position in 2011 INSEAD ranking, indicates that its main role is to maintain its top place in the ranking. In parallel by keeping the top position since 2007, it increased the number of articles in the French press. One should know that the occurrence of each ranking is widely publicized through the content of articles.

5.2. *The growing theme of innovation in Switzerland*

The Ecole Polytechnique Fédérale de Lausanne (EPFL) is an academic institution specialized in the domain of science and technology. Having acquired an international renown, it appears often in the French-speaking press. This institution constitutes one of the cradles of research and innovation in French-speaking Switzerland while it has also constructed the EPFL Innovation Park, in 2010, a place of interaction between the research department of EPFL campus and enterprises willing to receive new ideas. Many enterprises have been established at this place; among them are distinguished actors such as *Nestlé*, *Credit Suisse*, which will be analysed later, but also other companies as *Siemens* and *Logitech*.

We incorporated EPFL in our research as this academic institution represents research and innovation in Switzerland as well as the ETH – Ecole Polytechnique Fédérale de Zurich - for German-speaking Switzerland.

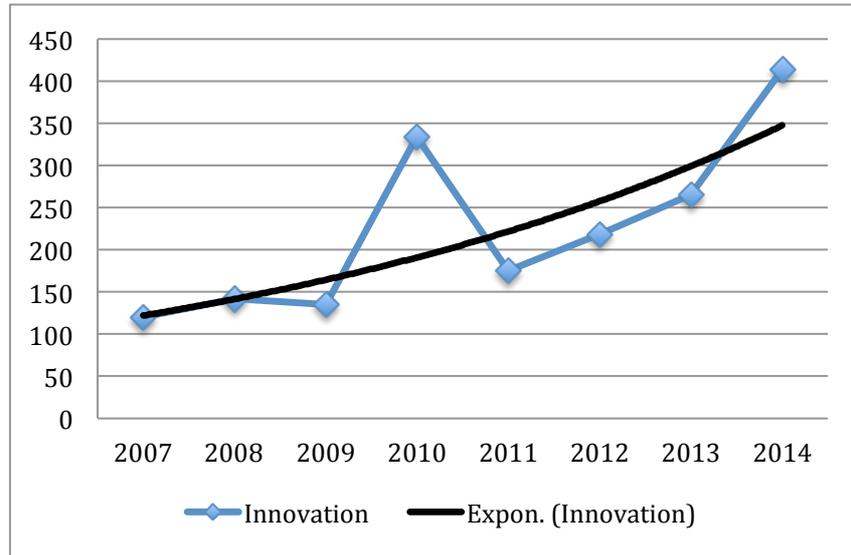


Figure 4. EPFL and innovation in the French-speaking press¹²

As reported from our results, this Lausanne institution is strongly linked to innovation in the French press. The frequency of occurrence increases starting 2007, with a very high rise in 2010, precisely when EPFL Innovation Park was established. Thereafter, we can say that 2014 favours the development of this theme associated with EPFL since the curve represents an unprecedented level via this graph. Besides, we have also created a trend line that provides the average of the curve over the period concerned (the black curve, named "exponentially" in the legend of *Figure 4*). Implementing this curve that flattens the significant variances we can comprehend that the increase occurs indeed since 2007.

Aiming to acquire an enhanced vision of this theme in Switzerland, we decided to focus on a French-speaking Switzerland reference newspaper, *Le Temps*. Its journalists have set the editorial objective to write in-depth captivating articles, better documented than other newspapers. For this reason, we expected to detect a large amount of articles, particularly in the economic field, in this newspaper.

¹² Years represented on the horizontal axis and the number of articles on the vertical axis.

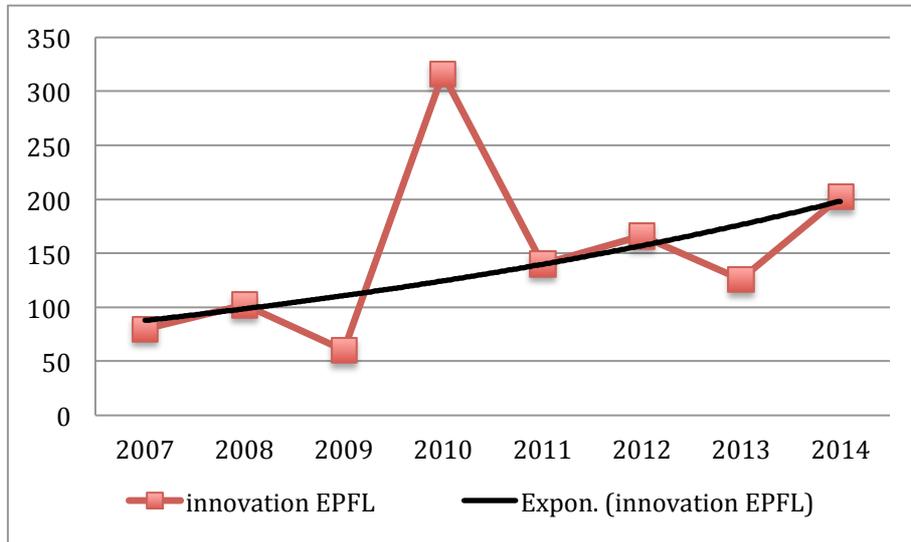


Figure 5. *EPFL and innovation discussed at the newspaper Le Temps*¹³

Having focused on this journal, we can identify, to a greater extent, the same tendency applied for French print media. Indeed, many articles deal with this theme, demonstrating the same sharp increase in 2010 - year of creation for the EPFL Innovation Park. The trend line for these two themes confirms the growth over this period.

5.3. A correlation between innovation and social networks

Having captured the media presence linked to innovation and frequency of innovation in Switzerland, we would like to correlate it with social networks.

¹³ Years represented on the horizontal axis and the number of articles on the vertical axis.

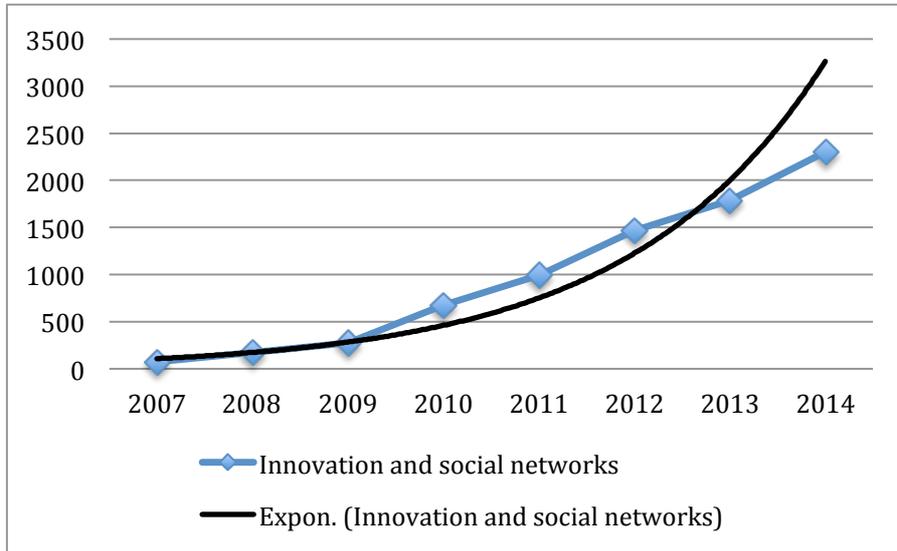


Figure 6. Innovation and social networks in the French-speaking press¹⁴

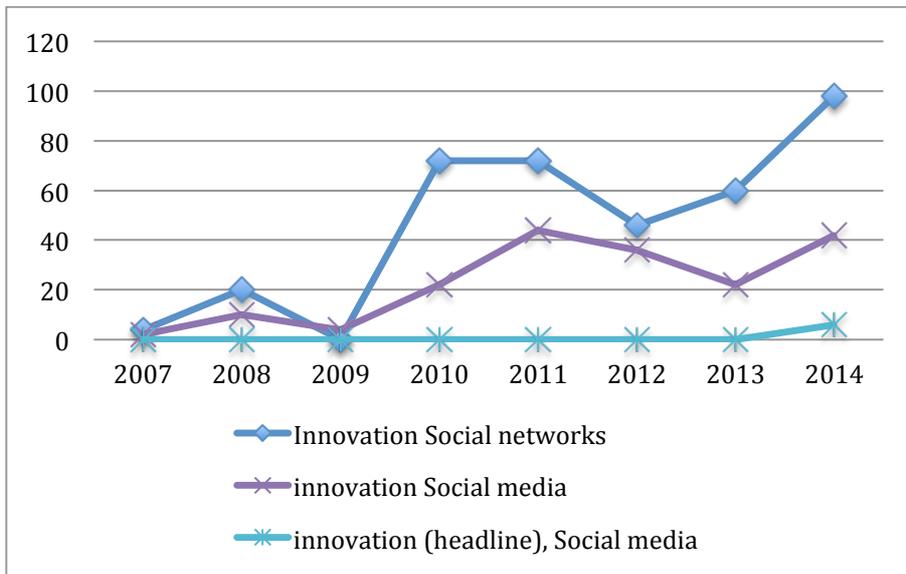


Figure 7. Innovation and social networks, innovation and social media in the newspaper Le Temps¹⁵

¹⁴ Years are indicated on the horizontal axis and the number of articles on the vertical axis.

¹⁵ Years indicated on the horizontal axis as the number of articles on the vertical axis.

The articles discussing innovation and social networks exist in greater numbers starting 2010. The chronology as well as the recent development of social networks could be regarded as factors that explain this late evolution. It seems that there exists a high increase of articles related to these themes.

Thereafter, we wanted to observe whether the link between innovation and social networks could also be traced in other terms such as social media¹⁶. Comparing the intensity level of the link between innovation and social networks to that of innovation and social media, it is argued that the former is constituted by a stronger link than the latter (as indicated by the above *Figure*). We could not prove whether the link between innovation and social networks is automatically generated, but we can argue that there exists a stronger correlation between these two terms, rather than with the term social media. This correlation is intensified through the following section.

5.4. The largest enterprises in Switzerland are also the most innovative

At this point, we would like to observe the importance concerning the theme of innovation as it becomes interconnected with a Swiss reference company. For this reason, we relied on the Swiss Market Index: the stock index of the Swiss market which consists of 20 Swiss companies not only possessing the highest market capitalisations, but also emerging within the French-speaking press through the theme of innovation. The graphs indicate an evident development of these themes year after year.

¹⁶ This notion is preferred to that of social network by some authors as Kaplan M. & Haenlein M. (2010).

Based on this graph, we can notice that some Swiss companies stand out clearly. In 2007 five company brand names have been distinguished as embodying innovation. The front position is occupied by the pharmaceutical company *Roche* expanding the gap with other enterprises year after year. At the end 2014, *Roche* takes a leading position in comparison with the other SMI enterprises in terms of innovation. Specialized in agriculture, food and beverages, *Nestlé* is second in 2007. It had retained a good level in this graph and evolved progressively until 2014. From 2009, *Credit Suisse* will be increasingly correlated with the term of innovation until 2013 because, from this chronological period, the frequency of occurrence will be more than tripled in one year (from 192 articles concerned by this theme in 2013 to 619 in 2014 (*Figure 8*)).

The graph below is based on the same construction as the previous one: we linked the 20 companies of the SMI with a key term but here, the correlation will be examined through another key term: the “social network(s)” (singular and plural are taken into account).

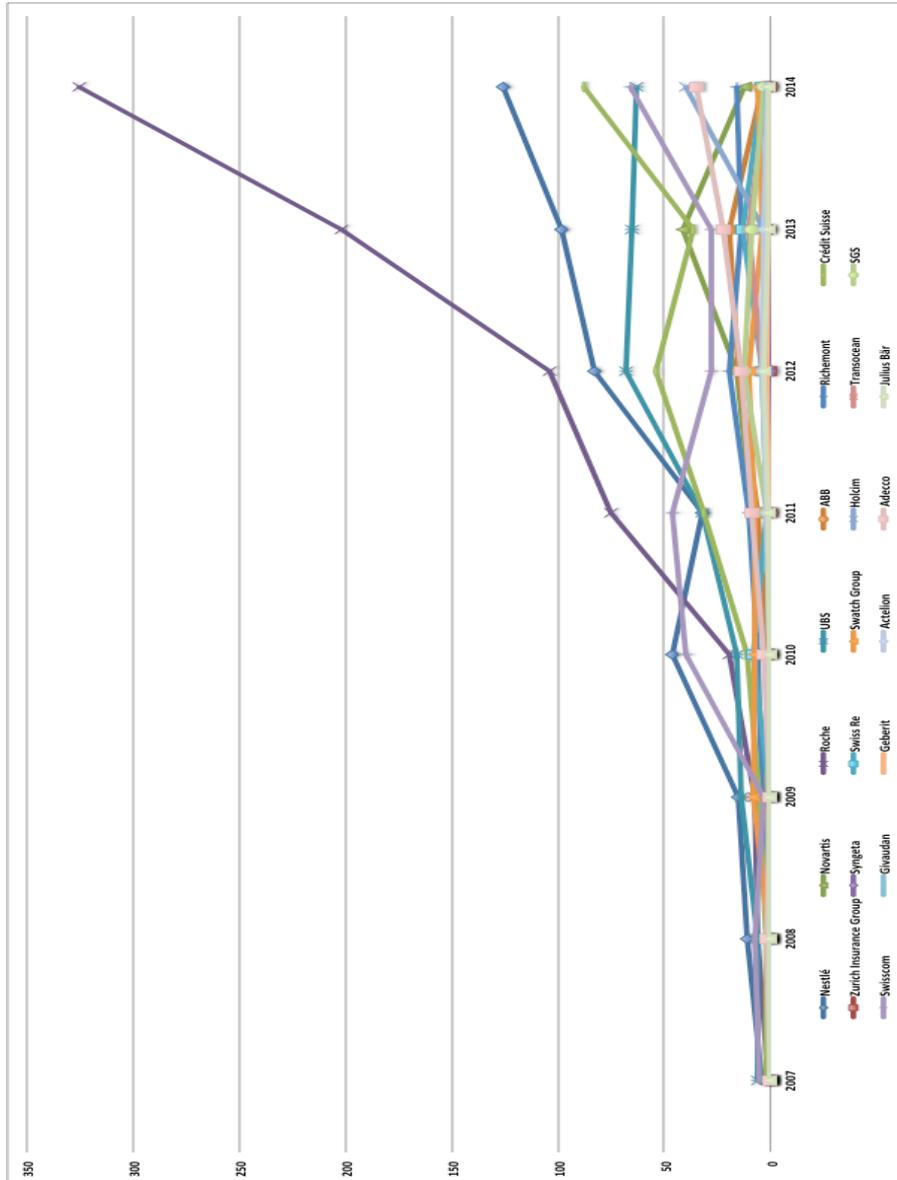


Figure 9. SMI enterprises and social networks in the French-speaking press ¹⁸

¹⁸ Years indicated on the horizontal axis as the number of articles on the vertical axis.

After the analysis, this graph clearly distinguishes again the enterprise *Roche*. Consequently, this company embraces, more than other enterprises examined during this study, the themes of innovation and social networks.

Nestlé has taken the way of social networking in advance, compared to other enterprises and despite an irregular evolution, ends up in 2014 with the second position. The rest of the enterprises being discussed in this section, present a rather low level of frequency mentions for the period concerned. *Novartis* reached a quite high peak in 2013 however it did not pursue over time. Probably, this peak occurred due to the controversy emerging on social networks after the departure of the *Novartis* director, and more precisely after having granted an important departure bonus. For this case, this peak could not be considered as beneficial for the company.

If we decide to stop a while on the comparison of these two graphs, certain interesting conclusions could already be drawn. The enterprise *Roche* is mentioned abundantly in comparison with other enterprises analysed with these two terms. *Nestlé*, in respect to innovation and social networks, takes the first step to stand out in 2010 but did not succeed to maintain its prominent position. Despite this fact, it achieved a significant number of presences in 2014 in line with the two terms researched. Despite an irregular evolution, *Credit Suisse* finishes also 2014 with a fortified presence in relation to innovation and social networks. The bank *UBS* in association with innovation, achieved to stimulate discussions around its brand name causing a slight growth from year to year. Taking into consideration, its relation with social networks, this enterprise has increased to some extent its presence but without generating a dramatic increase. For *Novartis*, 2010 was marked as the year that triggered discussions around its brand name in relation to innovation because in 2009 and 2010 the Basel based Company achieved record results though the launch of new products. As to *Swisscom*, it demonstrates a relative presence in conjunction with the social networks and more precisely, since 2012 it appears to draw a low degree of attention from the French-speaking press in association with the theme of innovation. This fact could be perceived as unexpected for a company with strategic plans in multimedia and new digital technologies.

Other companies have also generated discussions centred around their association with innovation and social networks. However, this is achieved to a less significant extent in comparison with other enterprises analysed during this section. Therefore, we can conclude that the enterprises demonstrating a strong bond with the term of innovation, fortify also their association with social networks. At this point, we would like to represent visually this fact via the following *Figure*, which indicates a group of the most advanced enterprises in each category; innovation and social networks.

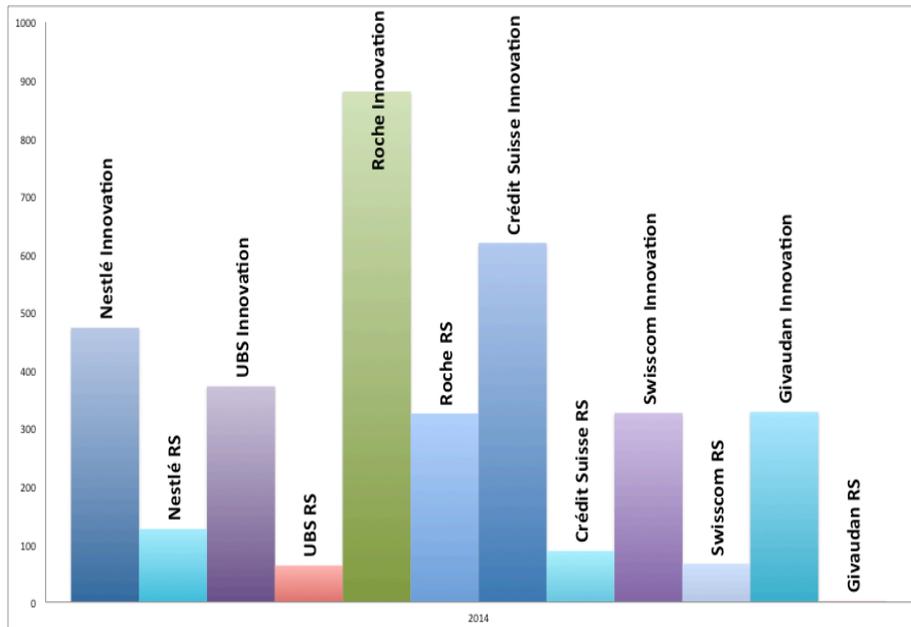


Figure 10. SMI enterprises with innovation and SMI enterprises with social networks¹⁹

Each column represents the number of articles dedicated to an enterprise under analysis, in conjunction with the terms of innovation or social network. In order to construct this *Figure*, our analysis was centred around six enterprises which convey the highest rate of articles in relation to innovation²⁰. Combining the rate of articles with the term of innovation as well as with the term of social networks, there appears a correlation between innovation and social networks. Indeed, of the six enterprises which have been highly ranked in the category of innovation, five of them are concomitantly assigned to the classification of social networks. With the exception of the enterprise *Givaudan*, the rest of the enterprises: *Roche*, *Credit Suisse*, *Nestlé*, *UBS* and *Swisscom* verify this link between innovation and social networks.

¹⁹ The year of 2014 is represented at this graph. The vertical axes indicate the number of articles.

²⁰ We wanted to select a "TOP 5", the 5 top enterprises of each ranking, however we realized that *Swisscom* was significantly represented with social networks and close to *Givaudan*. Therefore, we decided to include *Swisscom* as the 6th enterprise at the category of innovation.

Table 2. Ranking innovation and social networks

Ranking Innovation			Ranking Social Networks		
	Enterprise	Number of articles		Enterprise	Number of articles
1	Roche	880	1	Roche	325
2	Credit Suisse	619	2	Nestlé	126
3	Nestlé	473	3	Credit Suisse	88
4	UBS	372	4	Swisscom	66
5	Givaudan	328	5	UBS	63
6	Swisscom	326	15 ²¹	Givaudan	2

In parallel with this fact, the data presented in this *Table*, demonstrates that the largest enterprises in Switzerland are also the most innovative. Certainly the enterprises constituting the SMI can be considered as the largest in terms of market capitalization and cash possessions. These companies are rendered more accessible to every kind of investors. Not surprisingly, they provide the foundation to make innovations flourish.

Conclusion

This analysis gave us the opportunity to notice that the theme of innovation is significantly increasing within the French-speaking print media. Over a period of seven years, the number of articles comprising this theme more than tripled – the multiplication coefficient is 3.12 precisely between 2007 and 2014. This fact enables the confirmation of our hypothesis arguing that the theme of innovation increases significantly in the French-speaking press. Regarding our quest to detect the existence of the correlation between the INSEAD ranking and the theme of innovation in the print media, we tracked down a low degree of correlation between these two parameters.

Our second hypothesis also assumes that the theme of innovation in the press has increased, but this time, in conjunction with the innovation practices conducted in Switzerland. For this reason, we have monitored the mentioning of “EPFL” in the French-speaking press as well as in *Le Temps*. Taking into account the first case (French-speaking press) the number of articles was multiplied by 3.45 whereas the coefficient for the newspaper *Le Temps* was 2.53. Out of curiosity, we also wanted to find the number of articles covering the theme of innovation, by detaching the occurrences of EPFL. In this case, one could observe an increase of 1.45 from 2007 to 2014. As we can notice from the final summary chart of the different thematic researches (see *Table 3*), the topic of innovation has been perceived as a major issue in Switzerland, for a long period of time. In fact, in 2007 *Le Temps* dealt

²¹ We can see that *Givaudan* is an exception and is not as present on social networks that we could claim judging its high rate in terms of innovation. *Givaudan* is 15th out of 20 companies analysed here.

considerably with the theme of innovation. Although for the last seven years, this newspaper has shown only a slight increase of references concerning innovation, overall the mentioning of innovation has intensified throughout the entire French-speaking print media analysed in this study. We can also observe that EPFL and innovation have gained international recognition that is reflected in French-speaking print media.

Table 3. Comparative table of the number of articles in relation with Helvetic innovation

	Innovation <i>Le Temps</i>	Innovation French press²²	EPFL and innovation <i>Le Temps</i>	EPFL and innovation French press
2007	1128	21245	80	120
2014	1630	66246	202	414
Multiplication	x 1.45	x 3.12	x 2.53	x 3.45

Switzerland has invested considerably in the construction of technological parks or other « incubators » of ideas generated in line with academic laboratories (Comtesse, 2013, p. 15). This proliferation within the Swiss research landscape is apparently recognized abroad. Hence innovation in Switzerland appears as an increasingly important theme, which allows us to confirm our second hypothesis.

Finally, we have also assumed the development of a strong link between innovation and social networks in the French-speaking media content. This hypothesis is verified through our research. Social networks have invaded the content of the articles rather late; this phenomenon makes sense when taking into account their recent development. As a matter of fact, since 2010, the articles related to innovation and social networks appear to increase sharply and constantly. So it seems that, as a media article refers to the theme of innovation, there is also a strong possibility that social networks will also be mentioned. Nonetheless, we have noticed that the theme of innovation was mentioned more often than social networks. We could also realize that the term of social media was practically never evoked in relation with innovation.

Blackrock enterprise which leverages social networks in order to capture trends in innovation appears to implement an effective strategy since the link between innovation and social networks increases over the years. We have, also, relied on the Web for our research especially in order to comprehend the innovation level of certain companies. Therefore, for us, academics, the research was conducted in order

²² This data does not concern the Swiss innovation but was introduced for the purpose of comparison.

to acquire an in-depth knowledge concerning innovation; whereas for *Blackrock* marketers and investors, the focus was on the right investment decision.

For our last hypothesis, we can claim that the largest enterprises of the SMI are defined as those strongly interconnected with innovation. However, this notion could not be applied for all the enterprises examined in this study. Hence, we could argue that six enterprises have been distinguished in relation with innovation: *Roche*, *Credit Suisse*, *Nestlé*, *UBS*, *Givaudan* and *Swisscom*. This link can be justified by the fact that the largest enterprises generate stronger cash flows thus enabling them to invest more in R&D. Indeed, the enterprise *Roche* is perceived as a prominent figure in the field of innovation. This relation however, could not be established automatically, as certain enterprises decide to invest their capital in other domains. Yet, Helvetic innovation runs on a model that relies heavily on the enterprises. It is worth mentioning that three quarters of R&D investments are attributable to them (Comtesse, 2013, p. 13) Hence Helvetic enterprises are instrumental in positioning Switzerland as a nation leading in innovation.

However, this performance relies on the largest Swiss enterprises and might not always be guaranteed. If these enterprises decide to relocate or even to increase the share of foreign R&D expenditure – a tendency already observed since 1990 – this could jeopardize the position of innovation in Switzerland (Comtesse, 2013, p. 13). Just as the Silicon Valley model needs to constantly reinvent itself to remain competitive, the same tactic should also be applied to the Helvetic model.

Reinventing means that a company should think about how to progress, re-design itself to anticipate and adapt to change (Chauvel, 2016, p. 19), improve its products or services, pay as much attention to better investment practices or even to appeal to users in order to study their propositions, suggestions of improvement²³. Nonetheless, it should be clarified that these approaches of stimulating the participation of citizens cannot be defined as the norm even if they are developed in an ever-increasing manner, these tactics still remain a minority. According to Stefan Bratosin participation²⁴ is rather a myth that allows the decision makers to "promote forms of participation that do not question their own power while those who are not involved in the decision process strive to access it" (2001, p. 97). To put it differently, this could denote that our society seeks to voluntarily maintain the myth of participation among its citizens thus to make them believe that their opinion is taken into account, by integrating the new acquisitions of this common heritage. This principle is achieved by paying attention not to challenge the power of those who govern them (2001, p. 97). Nicolas Pélissier and Serge Chaudy embrace these notions mentioned supra as they emphasize through applied research on participative

²³ Consultation of this study about this issue: Hoeber, B. (2015). *Innovation contests within firm boundaries – Areas of action to increase organizational support*. Paper presented at the conference Open and User Innovation 2015, Lisbon.

²⁴ Concerning this concept of participation, we recommend to refer to Carpentier, N. (2011). The concept of participation. If they access and interact, do they really participate ?, *Communication Management Quarterly*. 21, 13-36.

journalism, that the public is not perceived as participatory, in as much as the professionals tend to believe (2009).

These prior remarks allow us to put in perspective the level of openness of enterprises. This also indicates that the implementation of a management strategy oriented towards social networks and the launch of open innovation practices cannot be granted. We have also realized, through the analysis of the twenty Swiss Market Index enterprises that despite the outstanding performances indicated for five enterprises, many other companies do not reach a significant level of mentions in the press in terms of innovation and social networks.

On account of the evolving curves of our graphs, we believe that the issue of innovation and social networks will continue to develop in the content of articles in the French and Swiss press. The act of innovating still remains a crucial challenge for any enterprise. Many of them are eager to take advantage of the Web's potential and the information transmitted by users to better understand their needs. Consequently this improves their chances of succeeding in the launch of a new product on the market and to reduce the risk associated with the innovation process (Rabeh, Faïz & Hakim, 2012, p. 191).

References

- Asdourian, B., & Zimmerli, V. (2015). Open data, usagers du numérique et entreprises publiques. Les échanges informationnels et relationnels au service de l'innovation dans les transports en commun de Genève. In P.Y. Badillo & N. Pélissier (Eds.). Usages et usagers de l'information à l'ère numérique. *Revue Française des Sciences de l'Information et de la Communication*. 6, from <http://rfsic.revues.org/1316>
- Badillo, P.-Y., Bourgeois, D., & Asdourian, B. (2013). Les médias sociaux: communication "généralisée" versus communication "polarisée"- deux exemples euroméditerranéens : les révoltes dans les pays arabes et le projet Fire Paradox. In F. Bernard, M. Durampart. (Eds.). *Savoirs en action, Cultures et réseaux méditerranéens*. Paris: CNRS Editions, Collection Alpha.
- Badillo, P.-Y., Coll, S., & Zimmerli, V. (2014). La ré-innovation numérique et les nouveaux usages. In P.-Y. Badillo & D. Roux (Eds.), *Le futur est-il "e-media"?*. Paris: Economica, 146–157.
- Badillo, P.-Y. (2013). Les théories de l'innovation revisitées: une lecture communicationnelle et interdisciplinaire de l'innovation? Du modèle «émetteur» au modèle communicationnel. *Les Enjeux de l'Information et de La Communication*. Grenoble: Gresec, 14(1), 19–34.
- Bratosin, S. (2001). *La concertation: Forme symbolique de l'action collective*. Paris: L'Harmattan.
- Cardon, D. (2006). *La trajectoire des innovations ascendantes: inventivité, coproduction et collectifs sur Internet*. Paper presented at the conference Innovations, Usages, Réseaux, Montpellier, France.

- Carpentier, N. (2011). The concept of participation. If they access and interact, do they really participate ?. *Communication Management Quaterly*. 21, 13-36.
- Chauvel, D. (2016). Social media and the design of an innovative enterprise. *Journal of Innovation Economics & Management*. 1, 19, 113-133.
- Chesbrough, H., Vanhaverbeke, W., & West, J. (2006). *Open innovation: researching a new paradigm*. Oxford-New York: Oxford University Press.
- Comtesse, X., & Zinkl, W. (2013). Document de travail: La santé de l'innovation suisse. Zurich: *Avenir Suisse*.
- Darlington, J., Striukova, L., & Rayna, T. (2015). *Co-creation and User Innovation : The Role of Online 3D printings Plateforms*. Paper presented at the conference Open and User Innovation 2015, Lisbon.
- Ellison, N.B., & boyd, d. (2013). Sociality through Social Network Sites. In W.H. Dutton, (Ed.). *The Oxford Handbook of Internet Studies*. Oxford: Oxford University Press, 151-172.
- Hoeber, B. (2015). *Innovation contests within firm boundaries – Areas of action to increase organizational support*. Paper presented at the conference Open and User Innovation 2015, Lisbon.
- Jauréguiberry, F., & Proulx, S. (2011). *Usages et enjeux des technologies de communication*. Toulouse: Editions érès.
- Kaplan, A.M., & Haenlein, M. (2010). Users of the world unite ! The challenges and opportunities of Social Media. *Business horizons*. 53(1), 59-68.
- Luoma-aho, V. (2007). *Reputation Formation of Innovations*. Paper presented at the fourth Conference on Innovation Journalism. Stanford University, California.
- O'Reilly, T. (2005). *What is web 2.0. Design patterns and business models for the Next Generation of Software*. Retrieved April 27, 2016, from <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>
- Pélessier, N. & Chaudy, S. (2009). Le journalisme participatif et citoyen sur Internet: un populisme dans l'air du temps ?. *Quaderni*. 70. Retrieved July 24, 2015, from <http://quaderni.revues.org/512>.
- Rabeh, M., Faiz, G., & Hakim, H. (2012). Public-private innovation networks and innovation activities in French service firms. *Journal of Innovation Economics & Management*. 10(2), 191-217.
- Rothwell, R., & Zegveld, W. (1982). *Innovation and the Small and Medium Sized Firm*. London: Frances Pinter.
- Salampasis, D. (2015). *Financial institutions in the era of open innovation: individuals and organization at a crossroads*. Paper presented at the conference Open and User Innovation 2015, Lisbon.
- Schmookler, J. (1966). *Invention and economic growth*. Cambridge, Massachusetts: Harvard University Press.

- Schumpeter, J. A. (1983). *Capitalisme, socialisme et démocratie*. Paris: Payot.
- Surowiecki, J. (2008). *The Wisdom of Crowds*. Paris: JC Lattès.
- von Hippel, E. (1988). *The Sources of Innovation*. New York: Oxford University Press.
- von Hippel, E. (2005). *Democratizing innovation*, Cambridge: MIT Press.
- von Hippel, E. (2013). User innovation. In A.S. Huff, K.M. Möslin & R. Reichwald. *Leading open innovation* (p. 117-133). Cambridge, Mass: MIT Press.
- Yu, J., Russel, M., Still, K., Rubens, N., Huhtamäki, J., & Pöschko, J. (2011). *Social Media, Reputation And Branding Of Innovation Hubs: A Periscope Using Content Analysis of Twitter*. Paper presented at the conference Triple helix conference (th).

